

CLAIMS

What is claimed is:

- 1 1. A method for dynamically processing data, the method comprising the
2 steps of:
3 determining a sustainable data transfer rate between a data appliance and an
4 external memory medium;
5 selecting a value for at least one operational parameter within the data
6 appliance in response to the sustainable data transfer rate; and
7 processing data in accordance with the at least one operational parameter.

- 1 2. The method of claim 1, wherein determining a sustainable data transfer
2 rate between a data appliance and an external memory medium comprises transferring
3 a test file between the data appliance and the external memory medium.

- 1 3. The method of claim 1, wherein selecting a value for at least one
2 operational parameter comprises identifying a data acquisition parameter.

- 1 4. The method of claim 3, wherein processing data in accordance with the
2 at least one operating parameter comprises acquiring and formatting image data.

- 1 5. The method of claim 3, wherein identifying a data acquisition
2 parameter comprises changing at least one of a value associated with spatial resolution
3 and frame rate.

- 1 6. The method of claim 1, wherein selecting a value for at least one
2 operational parameter comprises identifying a data compression parameter.

- 1 7. The method of claim 6, wherein identifying a data compression
2 parameter comprises changing at least one of an indicator associated with a bit rate, a
3 frame type, and a search area for motion vectors.

1 8. The method of claim 1, wherein selecting a value for at least one
2 operating parameter in response to the sustainable data transfer rate comprises
3 determining a desired data transfer rate responsive to the sustainable data transfer rate.

1 9. A data appliance, comprising:
2 an acquisition system configured to acquire data in response to an acquisition
3 parameter;
4 a processing system coupled to the acquisition system, the processing system
5 configured to transform data in response to a processing parameter; and
6 a memory interface coupled to the processing system, wherein the data
7 appliance configured to select a value associated with at least one of the acquisition
8 parameter and the processing parameter responsive to a sustainable data transfer rate
9 between the memory interface and an external memory medium.

1 10. The appliance of claim 9, further comprising:
2 an internal memory configured to store a test file.

1 11. The appliance of claim 10, wherein the memory interface is configured
2 to apply the test file to measure a sustainable data transfer rate.

1 12. The appliance of claim 9, wherein the sustainable data transfer rate is
2 associated with a data write operation.

1 13. The appliance of claim 9, wherein the sustainable data transfer rate is
2 associated with a data read operation.

1 14. The appliance of claim 9, wherein the data appliance comprises a
2 digital camera.

1 15. The appliance of claim 14, wherein the acquisition parameter
2 comprises one of spatial resolution and frame rate.

- 1 16. The appliance of claim 14, wherein the processing parameter
2 comprises one of a bit rate, frame type, and search area for motion vectors.
- 1 17. The appliance of claim 9, wherein the data appliance applies a
2 predetermined set of parameter values responsive to a range of sustainable data
3 transfer rates between the memory interface and an external memory medium.
- 1 18. A system for responding to a data transfer rate, comprising:
2 means for determining a sustainable data transfer rate for data transfers to/from
3 an external memory medium coupled to the system;
4 means for acquiring a data stream;
5 means for transforming the data stream; and
6 means for selecting a value for at least one operational parameter associated
7 with the means for acquiring or the means for transforming the data stream in
8 response to the sustainable data transfer rate.
- 1 19. The system of claim 18, wherein the means for acquiring a data stream
2 is responsive to at least one acquisition parameter.
- 1 20. The system of claim 19, wherein the at least one acquisition parameter
2 comprises one of spatial resolution and frame rate.
- 1 21. The system of claim 18, wherein the means for transforming the data
2 stream is responsive to at least one processing parameter.
- 1 22. The system of claim 21, wherein the at least one processing parameter
2 comprises a video data compression parameter.
- 1 23. The system of claim 22, wherein the video data compression parameter
2 comprises one of a desired bit rate, frame type, and search area for motion vectors.

1 24. A computer-readable medium having stored thereon an executable
2 instruction set, the instruction set, when executed by a processor, directing the
3 processor to perform a method comprising:
4 retrieving a test file and an initial bit rate;
5 transferring the test file to an external memory medium responsive to the
6 initial bit rate;
7 determining if a data transfer error condition exists;
8 when it is the case that no data transfer error exists, recording the bit rate to
9 generate a sustainable data transfer rate;
10 when it is the case that a data transfer error exists, decreasing the bit rate to
11 generate an interim bit rate and repeating the transferring, determining, decreasing,
12 and recording steps.

1 25. The computer-readable medium of claim 24, wherein retrieving a test
2 file and a bit rate comprises retrieving video data.

1 26. The computer-readable medium of claim 24, wherein the data transfer
2 error comprises a write operation error.

1 27. The computer-readable medium of claim 24, further comprising:
2 selecting at least one operational parameter in response to the sustainable data
3 rate; and
4 applying the operational parameter.

1 28. The computer-readable medium of claim 27, wherein the operational
2 parameter is at least one of an acquisition parameter and a data compression
3 parameter.

1 29. The computer-readable medium of claim 28, wherein the acquisition
2 parameter comprises one of spatial resolution and frame rate.

1 30. The computer-readable medium of claim 28, wherein the data
2 compression parameter comprises at least one of a desired bit rate, frame type, and
3 search area for motion vectors.

1 31. A computer-readable medium having stored thereon an executable
2 instruction set, the instruction set, when executed by a processor, directing the
3 processor to perform a method comprising:
4 retrieving a test file and an initial bit rate;
5 transferring the test file to an external memory medium;
6 retrieving the test file from the external memory medium responsive to the
7 initial bit rate;
8 determining if a data transfer error condition exists;
9 when it is the case that no data transfer error exists, recording the bit rate to
10 generate a sustainable data transfer rate;
11 when it is the case that a data transfer error exists, decreasing the bit rate to
12 generate an interim bit rate and repeating the transferring, retrieving, determining,
13 decreasing, and recording steps.

1 32. The computer-readable medium of claim 31, wherein retrieving a test
2 file and a bit rate comprises retrieving video data.

1 33. The computer-readable medium of claim 31, wherein the data transfer
2 error comprises a read operation error.

1 34. The computer-readable medium of claim 31, further comprising:
2 selecting at least one operational parameter in response to the sustainable data
3 rate; and
4 applying the operational parameter.

1 35. The computer-readable medium of claim 34, wherein the operational
2 parameter is at least one of an acquisition parameter and a data compression
3 parameter.

1 36. The computer-readable medium of claim 35, wherein the acquisition
2 parameter comprises one of spatial resolution and frame rate.

1 37. The computer-readable medium of claim 35, wherein the data
2 compression parameter comprises at least one of a desired bit rate, frame type, and
3 search area for motion vectors.

1 38. A digital camera, comprising:
2 an image acquisition system configured to generate a video data stream;
3 a data processing system configured to receive and transform the video data
4 stream to generate a compressed data stream;
5 an external memory interface coupled to the data processing system and
6 configured to feed back a sustainable data transfer rate to one of the image acquisition
7 system and the data processing system.

1 39. The digital camera of claim 38, wherein the image acquisition system
2 is responsive to at least one of spatial resolution and frame rate.

1 40. The digital camera of claim 38, wherein the data processing system is
2 responsive to at least one of a desired bit rate, frame type, and search area for motion
3 vectors.

1 41. The digital camera of claim 38, wherein the sustainable data transfer
2 rate is responsive to a data write operation.

1 42. The digital camera of claim 38, wherein the sustainable data transfer
2 rate is responsive to a data read operation.